THE SHIPPING ENQUIRY.

Remarks on the Enquiry instituted at Montreal in the Autumn of 1900, by the Shipping Interest and the Marine Underwriters, into the needs of the St. Lawrence Route from Montreal to the Sea; together with a Synopsis and an Abridgment of the Evidence heard at the various Meetings.

The Shipping firms at whose instance the Enquiry was held are the following:—

HUGH & ANDREW ALLAN,

ALLAN LINE.

CARBRAY, ROUTH & CO.,

ELDER, DEMPSTER & CO.,

LONDON LINE.
LIVERPOOL LINE.
BRISTOL LINE.

FURNESS, WITHY & CO., LTD.,

FURNESS LINE.
HAMBURG AMERICAN LINE.
MANCHESTER LINERS.

KINGMAN & CO.,

BLACK DIAMOND LINE.

FRED'K LEYLAND & CO.,

LEYLAND LINE.

ROBERT REFORD & CO., LTD.,

DONALDSON LINE.
THOMPSON LINE.
LORD LINE.

DAVID TORRANCE & CO.,

DOMINION LINE.

CAMPBELL, MEREDITH, ALLAN & HAGUE,

Solicitors.

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ENQUIRY INSTITUTED BY THE SHIPPING INTEREST AND THE MARINE UNDERWRITERS INTO THE NEEDS OF THE ST. LAWRENCE ROUTE FROM MONTREAL TO THE SEA.

Those who are most directly interested in the navigation of the St. Lawrence river began at Montreal a series of meetings, beginning October 2, 1900, and continuing until December 12, for the purpose of inquiring into the needs of navigation in the St. Lawrence river and gulf, in order to render the same safer, easier and equal to modern requirements.

As was explained at the first meeting, on October 2nd, by the chairman, Mr. John Torrance, the object of the enquiry was to procure the opinions of the shipping masters as to the real, important needs of the St. Lawrence navigation, in order to press the matter upon the attention of the Dominion Government with a view to its making the necessary improvements to secure reduced marine insurance rates which, as he pointed out, were so excessive.

The people who brought about this investigation and conducted the enquiry throughout are those who are most largely interested in trans-atlantic shipping by the St. Lawrence route, and the attention of the Dominion Government is respectfully called to the vast importance of the results of the enquiry, not only to the shipping interest but to the whole trade of Canada.

The evidence heard at the investigation proves, in the very strongest way, that the present state of the navigation is difficult and the aids thereto out of date. The system of lights, signals, buoys and other aids is found to be of a very low standard and far below what seamen would have it. The present state of things is not consistent with the greatest security to life and property. It is clear that it is not only the larger trans-Atlantic steamship companies who suffer, but also all persons directly or indirectly interested in trade which depends in any way on the St. Lawrence navigation. The small coasting vessels and even fishermen's craft, as much as larger steamships, are dependent upon the guides and marks afforded by the Government. It is in fact impossible to exaggerate the importance of the improvements and changes, which will be

pointed out later on, and the urgent necessity of the work being attended to without delay.

In dealing with this question it should be borne in mind that our shipping season by the St. Lawrence is a short one due to climatic reasons and it becomes therefore imperative that all apparatus conducive to safe, speedy and modern navigation should be of the best possible type.

An enormous proportion of the produce of the Dominion of Canada at present has no other than the European market, and in order that the producer in Canada may be able to compete with the exporter of other countries successfully, it is necessary that the produce of Canada should reach the European market with as low a charge in connection with its transport as possible. The chief expenditure in connection with such transport, so far as the export is concerned, is made up of freight and insurance. The freight itself not only must cover the actual cost of carriage and profit thereon for the carrier, but it must also recoup him for his insurance upon the hull. The insurance which the exporter has to pay upon his produce is also at present a serious charge. It is therefore perfectly clear that to enable the Canadian producer to compete with his rivals, the freight, the insurance upon the hull and the insurance upon the cargo must be as low as circumstances will permit. The circumstances governing these charges are largely controlled by the Government, for, if the St. Lawrence route is made convenient and equal to modern requirements, these charges will naturally diminish. An increase in the facilities of navigation will rapidly tend to diminish the insurance rates upon the hulls and cargoes, will largely augment the amount of tonnage which comes to Canada by the St. Lawrence, will increase the size of vessels (which will also tend to diminish the rate of freight) and will provide better steamers, thus enabling the Canadian producer to reach his market promptly and almost to a certainty upon definite dates. The promptness of delivery in Europe is of vital importance to much of the produce of Canada, especially perishable articles and cattle. If, therefore, the improvements, which are now suggested, are made, and they have the effect which it is only reasonable to anticipate, we may look forward in the immediate future to a large increase in the number of steamers, in the size of the steamers and in their promptness in reaching their destination, and we may also anticipate a diminution in freights and reduction in the rate of insurance both on hull and cargo, and a general cheapening of transport. A further effect will be a large increase in the exports of Canada, not only beneficial to the St. Lawrence route, but immensely increasing the traffic by railways and canals from the western part of Canada to the ports of the St. Lawrence. The advantage to be gained for the whole country is therefore perfectly obvious.

To the existing and antiquated condition of the water-way between Montreal and the ocean is due, to a large extent, the extraordinarily high and exorbitant rate demanded by the Marine Underwriters for insurance. The rate on the hulls of ocean steamers running to Montreal for, say six months, and to the Atlantic ports in the United States for the remaining part of the year, is from eight to ten per cent, and in some exceptional cases even eleven. The insurance rate on vessels running to the United States ports exclusively is from three and a half to four and a half per cent, and in some exceptional cases even five per cent, making an average of about four percent. The number of voyages made by steamers between Montreal and British and European ports is of an average of five. Thus Montreal tonnage by these enormous rates, largely due to the present condition of our water-way, is handicapped, as compared with shipping in the United States ports, to the extent of somewhat over one percent on every voyage, equal on an ordinary steamer worth $500,000 to about $5,000 per voyage or $25,000 per Montreal season of five voyages.

The insurance rate on cargo carried by vessels on the Canadian route is largely in excess of what it should be and, as compared with rates on cargo shipped from ports in the United States, is about two to five times as great according to the season of the year, as will be seen from the accompanying tariffs.

If the condition of St. Lawrence navigation is not improved to a very great extent and modernized, and if these improvements are not taken in hand immediately, one result, as far as Canadian trade is concerned, will be the removal from the St. Lawrence route of a great deal of our shipping. Shipping trade to Montreal is very largely owned in Great Britain and the owners will not continue to send their steamers to Quebec or Montreal if it pays better to send them to ports in the United States, as in fact it does now. The seriousness of the case will partly be seen by the following :--

(1) The withdrawal of a portion of the Dominion Line fleet to Portland.

(2) The withdrawal of a part of the Thomson Line fleet to Portland.

(3) The withdrawal of the larger boats of the Hamburg American Line fleet, the St. Lawrence tonnage of which line is greatly diminished, the larger steamers now trading with the United States ports.

(4) The decreased tonnage in the Donaldson Line fleet, some of whose larger steamers have been replaced by smaller ones, the larger ones now trading with United States ports.

(5) The withdrawal of the Johnston Line fleet to Liverpool.

(6) The reduction of the Leyland Line sailings.

It is respectfully contended that unless something is done by the Government to prevent this actual and threatened exodus the ocean trade of Canada will very considerably diminish.

The volume of printed evidence entitled "Evidence taken at an enquiry instituted by the Shipping Interest and the Marine Underwriters into the Needs of the St. Lawrence Route from Montreal to the Sea," contains a complete transcription by means of stenography of all the evidence that was taken at the enquiry. This evidence is very voluminous, and for convenience sake an abridgment of it is given herewith which will show at a glance what each witness has to say. The synopsis following immediately below is furnished to point out as clearly and succinctly as possible the changes and improvements in the various signals, lights and buoys that are demanded by the mariners who depend on these signs and marks for their guidance. It also shows where the channels require deepening and dredging. The references are to the pages of the bound volume of evidence, and not to the abridgment. This synopsis cannot adequately state the views of the witnesses on every point; its purpose is more to point out and emphasize the nature and position of the more important changes required and it is intended to be merely directory to the volume of printed evidence. To thoroughly understand the subject, however, it will be of course necessary, not only to read the abridgment of the evidence but to carefully study the evidence at length.

The whole respectfully submitted on behalf of the Shipping Interest.

ST. LAWRENCE TARIFF, 1900.

AS AGREED UPON BY ENGLISH OFFICES.

To one port of discharge in the United Kingdom, not North of London on the East Coast.

To a port on the East Coast of Great Britain, North of London, add 10 cents to rates on all lines.

To a direct port on the Continent between Havre and Hamburg (both inclusive) add 5 cents to rates applying to Classes A, B and C, and 10 cents to Classes D and E.

To Bristol add 5 cents for sailing to 30th September, and 10 cents for sailing afterwards.

ALL CHARTERED STEAMERS to be rated under and subject to the conditions of Class E.

CLASS "A," Steamers of the ALLAN LINE.

	Sailings.	Rates Net. Provisions & Mdse.	Grain.
May	1 to Sept. 15	.40	.45
Sept.	16 to Sept. 30	.45	.50
Oct.	1 to Oct. 15	.50	.60
Oct.	16 to Oct. 31	.60	.70
Nov.	1 to Nov. 10	.70	.80
Nov.	11 to Nov. 20	.80	$1.00
Nov.	21 to close of Navigation	$1.00	$1 20

CLASS "B," DOMINION LINE Steamers to Liverpool and Steamers DONALDSON and JOHNSTON LINES.

	Sailings.	Rates Net. Provisions & Mdse.	Grain.
May	1 to Sept. 15	.45	.50
Sept.	16 to Sept. 30	.50	.60
Oct.	1 to Oct. 15	.60	.70
Oct.	16 to Oct. 31	.70	.80
Nov.	1 to Nov. 10	.80	.90
Nov.	11 to Nov. 20	.90	$1.10
Nov.	21 to close of Navigation	$1.10	$1.30

CLASS "C," Steamers of THOMPSON, ELDER DEMPSTER, HEAD (Ulster S.S. Co.) LEYLAND, and LORD (Irish Shipowner's Co. Ltd.) LINES.

Sailings.		Rates Net. Provisions & Mdse.	Grain.
May	1 to Sept. 15	.50	.55
Sept.	16 to Sept. 30	.55	.65
Oct.	1 to Oct. 15	.65	.75
Oct.	16 to Oct. 31	.75	.85
Nov.	1 to Nov. 10	.85	.95
Nov.	11 to Nov. 20	$1.00	$1.20
Nov.	21 to close of Navigation	$1.20	$1.40

CLASS "D," Steamers of MANCHESTER LINE and HAMBURG-AMERICA PACKET CO., and Steamers "CEBRIANA," "SYLVIANA" and "DALTON HALL" of the HANSA-ST. LAWRENCE LINE.

Sailings.		Rates Net. Provisions & Mdse.	Grain.
May	1 to Sept. 15	.60	.65
Sept.	16 to Sept. 30	.65	.75
Oct.	1 to Oct. 15	.75	.85
Oct.	16 to Oct. 31	.85	.95
Nov.	1 to Nov. 10	$1.05	$1.15
Nov.	11 to Nov. 20	$1.25	$1.45
Nov.	21 to close of Navigation	$1.45	$1.65

CLASS "E," other Steamers (including those chartered by the above Lines) 100 A1 Triple, built not before 1890.

Sailings.		Rates Net. Provisions & Mdse.	Parcels Grain.	Carrying Gross Reg. or upwards of Grain.
May	1 to Sept. 15	.70	.80	$1.00
Sept.	16 to Sept. 30	.80	.90	$1.10
Oct.	1 to Oct. 15	.90	$1.00	$1.20
Oct.	16 to Oct. 31	$1.00	$1.20	$1.50
Nov.	1 to Nov. 10	$1.25	$1.50	$2.00
Nov.	11 to Nov. 20	$1.50	$1.75	$2.25
Nov.	21 to close of Navigation	$2.00	$2.50	$3.00

REVISED TARIFF ON PROVISIONS.

(This term to include butter, cheese, tallow, lard, grease, salted, pickled or smoked meats, and other preserved meats, packing house products, including canned goods but excluding fresh or dressed beef.)

Per rail and/ or steamers of approved regular lines, from St. John, N.B., Portland, Boston, New York or Philadelphia.

SCHEDULE.

	Steamers of Regular Lines Class A.	Steamers of Regular Lines Class B.	Other Approved Regular Lines and Steamers.
To direct port in United Kingdom not north of London on East Coast	20c.	22½c.	25c.
" Havre per Cie Generale Transatlantique,	22½c.		
" Hamburg per Hamburg-American Packet Co.			
" Bremen per North German Lloyd			
		Per Wilson Line	
" East Coast of Great Britain, north of London		22½c.	25c.
" Continent between Bordeaux and Hamburg, both included . .			25c.
" Mediterranean not beyond Sicily			35c.
" Adriatic			40c.

	B/L Apl. 1 to Aug. 31		B/L Sept 1 to Mch 31	
	Hamburg-American Packet Co.	Other Steamers.	Hamburg-American Packet Co.	Other Steamers.
" Denmark, Norway and Sweden not beyond Malmo	30c.	35c.	35c.	45c.
" German Baltic ports and Stockholm	35c.	40c.	50c.	60c.
" other Baltic ports.		50c.		60c.

To above destinations via Baltimore, Newport News or Norfolk, 2½c. net over above schedule.

Ditto, via Charleston and other South Atlantic ports, 10c. net extra over above schedule.

Ditto, via St. Lawrence route and regular line steamers per bills lading to August 31, inclusive, 20c. net extra over above schedule. Same, per bills lading after August 31, 40c. net extra over said schedule.

Ditto, via Gulf ports, 20c. net extra over above schedule.

Ditto, when Lake Transportation is included in the regular through transit to the seaboard, 12½c. net extra over above schedule.

Transhipment; Between ports on West Coast Great Britain and/or East Coast Ireland 2½c. extra, other transhipments between U. K. ports 5c. extra, other transhipments 10c. extra.

N.B.—The above tariff shall not apply to shipments at and from points in Canada via St. Lawrence route, but shall be applicable to all shipments via United States ports, whether shipped at and from Canadian points or not.

AVERAGE CONDITIONS.

The above rates of premium are based upon the following terms and conditions :—

Butter and Cheese to be insured only F. P. A.

N.B.—The term F. P. A. shall mean the following clause or an equivalent:

Warranted free of particular average, unless the ship or craft be stranded, sunk, on fire or in collision or in contact with any substance (ice included) other than water, the said collision or contact to be of such a nature as may reasonably be supposed to have caused or led to the damage claimed.

Other articles may be insured subject to following clause:

" Particular average payable if amounting to 3% upon each package, tierce or barrel, but claims for leakage and for underweight to be paid only if occasioned by the vessel being stranded, sunk, burnt or in collision."

Reduction for F. P. A.—Excepting on Butter and Cheese a reduction of 2½c. from above schedule may be made if insured subject to the F.P.A. clause.

LIST OF LINES TO COMPOSE CLASS A (Chartered Steamers excluded).

American,	Dominion,	Boston-Liverpool.
Cunard,	Warren,	
White Star,	Leyland,	

LIST OF LINES TO COMPOSE CLASS B (Chartered Steamers excluded).

Allan-State,	Dominion,	Johnston,
Anchor,	Elder Dempster,	Wilson Furness-Leyland
Atlantic Transport,		

New York, January 3rd, 1899.

SYNOPSIS GIVING THE SUBSTANCE OF THE WHOLE EVIDENCE.

The whole course of the navigation will be treated of under separate heads, viz.:—

I. The Coasts of the Gulf and the Lower St. Lawrence up to Father Point. The various points to be considered under this heading may be conveniently grouped as follows:—

(1) The Straits of Belle Isle route up to Anticosti.

(2) The South route by Cape Race up to Fame Point.

(3) Anticosti.

(4) The South shore of the Lower St. Lawrence from Fame Point to Father Point.

(5) The navigation about Nova Scotia and Prince Edward Island.

II. Pilotage waters from Father Point to Montreal:

(1) Father Point to Quebec and

(2) Quebec to Montreal.

I. THE COASTS OF THE GULF AND THE LOWER ST. LAWRENCE UP TO FATHER POINT.

(1) Straits of Belle Isle.

There is practically unanimity among the masters engaged in this trade as to what is needed to facilitate and protect the navigation of the Straits.

The following are references to the parts of the depositions dealing with this subject: Pages 2, 3, 4, 5, 6, 11, 18, 26, 29, 42, 50, 59, 66, 70, 78, 83, 89, 100, 110, 118, 131, 140, 152, 163, 169, 179, 183 and 188.

The chief desire is for a good light and fog signal on the North-East end of Belle Isle. All the captains but one who use the Straits ask for this. The present light is approved by most, though not by all, but another is certainly required at the North East end. It will be seen that when they come around rather far to the North a light to guide them at that end of the island would prove invaluable. They all agree in emphasizing the need of this light with a fog-signal.

The next requirement is a fog-signal at Flower Ledge on the Newfoundland Coast.

As will be seen by a glance at the references over two-thirds of the captains consider a fog-signal at Flower Ledge a necessity. Flower Cove marks the south-west entrance to the Straits.

Several ship-masters complain of the Cape Norman Signal. It is a very poor one and needs strengthening (4, 7, 12). Something, too, should be done to prevent the possibility of its being mistaken for Cape Bauld (179). One witness says that the signal at Point Amour is not loud enough, and another thinks that the light at that place and also the one at Flower Cove lack penetrating power (3 and 30).

As the distance from the Straits to Heart's Point is so very great, the majority of the captains would have a light placed on the Labrador Coast. St. Mary's is the favorite spot.

(2) South Route by Cape Race.

This deals with the various lights and signals from Cape Race to Fame Point. The references are: pages 3, 4, 11, 14, 17, 30, 36, 44, 53, 64, 73, 76, 85, 92, 97, 101, 103, 121, 125, 127, 128, 134, 145, 158, 165, 168, 173, 175, 177, 184, 191, 210, 218.

The first place is Cape Race. The possible improvement here is relatively not so important as in many other places, for, as will be seen, a great many of the captains have passed it over without suggestion. A few are satisfied with both light and signal. Two would have the signal and three the light increased in power. A siren would be most favored (pages 30, 36, 145 and 173). Another suggestion about Cape Race comes from four captains (pages 165, 173, 177, 184: it is that the Cape Race Light be moved a little to the south-west. They say that this would be an exceedingly useful alteration, for at present the light is too much up to the north-east to properly guide the vessels coming from the west.

The next place is Cape Pine. As to this, the suggestion for improvement is more unanimous and emphatic. At the present moment, Cape Pine has no fog-signal. All but one of the captains who were examined on this route express most unhesitatingly the absolute necessity of a good signal at this point. Too much emphasis cannot be given to their demands: on no other improvement is there more concurrence of opinion. As is stated elsewhere, the siren or whistle is most approved of for fog-signals. Nor is the light here approved of. It is at present a fixed light and lacks sufficient power. Some seven or eight say that this light is insufficient and would have it more powerful and an occulting or flash-light if possible (pages 101, 103, 121, 125, 158, 165, 173).

The next point dealt with is Cape Ray. Some fifteen or sixteen captains more or less strongly denounce the existing light. It seems to be altogether too feeble for the importance of the position and requires strengthening in the worst way. The same may be said of the signal. As elsewhere, a flash light and a siren would be the best.

There is another suggestion about Cape Ray. The light at Port Basque, a little to the east, is very weak and of no use, while the Cape Ray light itself being rather too much to the west, makes some change advisable. The Port Basque light might be made stronger or else the Cape Ray light itself might be moved a little south and placed on Duck Island; or another light put on Duck Island. Any of these alterations would seem to meet the wants of those who navigate this coast (pages 104, 121, 160, 166, 184).

Then, too, the signal at Cape Ray is denounced as very poor, and a new one—a good siren or whistle—should be placed here without delay (pages 14, 26, 31, 36, 145, 173, 178).

In any case a signal at Port Basque is suggested (pages 25, 160). It will also be observed (page 121) that the Port Basque light is a red flash and utterly useless. As stated elsewhere, red flashes anywhere are condemned.

After Cape Ray comes the Bird Rocks (pages 18, 31, 37, 45, 92, 128, 135, 160, 166, 173, 178, 192, 219). It is a fixed light here, and a very poor one at that. It is only on account of the excellent soundings about the Bird Rocks that vessels are enabled to pass here with no greater danger than they do. The reference shows that this light should be a flash light and at the same time considerably increased in power. Then the signal here is very bad. It is a gun fired at very long intervals. It should be replaced by a good siren or horn.

(3) Anticosti.

The references are pages 7, 12, 20, 26, 30, 61, 71, 79, 84, 90, 100, 109, 120, 132, 142, 153, 164, 171, 180, 183, 190.

It will here be seen that sixteen masters express the strongest desire for a further light on the Island. It appears that Heath Point Light, being the only one at the eastern point of the Island, is too much around to the south-west. Something more urgently wanted to enable mariners to round this coast more easily from the north. One or two suggest, as a remedy for this, a light-house on some high land up towards Fox Bay. The great majority, however, would strongly prefer a light ship anchored off Heath Point, in from twenty to forty fathoms of water, which would place it from three to ten miles from the shore. This would benefit them when rounding from either direction.

All those who spoke of the Heath Point Signal were unanimous in condemning the present one. A twenty-minute bomb is absurd and dangerous, for a ship would easily have time to run ashore in the interval.

At page 72 will be found a report of Capt. Main concerning Heath Point. He says that on his last voyage up the river, when rounding Heath Point in broad daylight with a clear N.W. wind, he observed an area of di-colored water. This is a bad sign, and usually signifies the presence of a shoal. He was at the time about four miles from land, and immediately set out another half-mile.

(4) The South Shore of the Lower St. Lawrence, from Fame Point to Father Point.

References: 3, 4, 5, 7, 13, 18, 25, 31, 37, 46, 54, 62, 67, 72, 77, 85, 91, 98, 105, 120, 125, 133, 143, 146, 154, 161, 164, 172, 178, 184, 191, 212, 220.

Beginning at Fame Point.—This is a most important place, especially for ships by the southern route. There is at present no fog-signal and all agree on the absolute necessity of having one. It may be stated in general that the demand is for good sirens or whistles in preference to guns. A glance at the above references shows this. Again, it is asserted by all, with one, or at most two, exceptions, that a good signal should be placed at every light-house, but with the qualification that they must all be distinctive. For this reason, one or two suggest the retaining of some kind of explosive signal here and there (98, 148). In any case the existing bombs and guns are condemned as fog-signals. It is held by all that the twenty minute interval between explosions is preposterous; the interval should never be longer than five minutes. Of course, in the case of sirens or whistles, the blasts should be practically continuous.

Another very general suggestion is that all the lights should be flashing, revolving or occulting, provided they be distinctive. And more power should be given them. A red flash is useless, merely dimming the light. A fixed light is preferred by one or two, but then only when there are no other lights with which to confuse it. The overwhelming majority ask for revolving, flashing or occulting lights (p. 127 for system of flash lights).

Off Matane, there is a small buoy which is found useless. It should be replaced by a large automatic can-buoy. Some would have it gas and some with a whistle (46, 106, 164, 172, 178).

All up this coast, the general suggestion is that the lights should be stronger and changed to flashing ones. Also that fog-signals be placed at the lights. Fame Point, Cape Chatte, Matane, and Father Point have especial need of signals.

(5) THE COASTS OF CAPE BRETON, NOVA SCOTIA AND PRINCE EDWARD ISLAND.

Refer to pages 44, 97, 158, 166, 168, 175, 210 and 219.

St. Paul's Island.—This signal is not properly heard.

At Sydney Harbor.—Low Point has a whistle which cannot be heard; it is useless as it is, and should be replaced by a new one with a different sound and more powerful. The light is not easily distinguishable in thick weather, and it is suggested that it be replaced by a group flash light. A steam whistle is suggested for this point. Another suggestion by two or three Captains is that the signal at the other side of the Harbor should be moved and placed at the Low Point light.

Flint Island light is described as miserable. It is supposed to be a flash light, but the Captains say that they have not yet observed the flash and consider it practically a poor fixed light. There is great need to have it replaced by a flash light having greater power.

Cape North.—This light requires strengthening. It is now a very poor one. There is no signal here and one is much wanted. From Sydney on the way to Cape North there are now two lights, these are only intended for the use of fishermen, and are very weak, but the desire is expressed to have them strengthened, as they would, if sufficiently strong, afford great assistance.

One witness (page 45) calls attention to the need of a light and signal on Byron's Island. He asserts that this is a very dangerous place, and had the light and signal been there before it might have prevented an accident that occurred.

About the Western end of Nova Scotia.—Cape Negro light is a wretched one and needs improving. It is a white light with red flash, and of no use. It is suggested to move it to the South-East side of the Island where it could be seen when approaching from either way. Baccaro is a fixed light and very poor. Cape Sable light is two and a-half miles inside the outside zone of danger. There should be a light-ship and a good signal. At the Lurcher Shoal there is now only a buoy. A good light-ship with a signal is desired. The same may be said about South Reef by Brier Island. At Musquash at the entrance to St. John, the light is very poor.

The lights on Prince Edward Island are fixed lights and red ones, they are therefore no good at all. They should all be replaced by distinguishable flash lights. West Point, Prince Edward Island, needs a signal. There is a buoy there, but it is no good. There should be a siren signal to guard against this reef. The present buoy being a large and heavy one, is rather a source of danger than of protection when the weather is thick or stormy. Cape Egmont is a

fixed red light, and no good. It should be stronger and a flash light. Grand River is the same. The lights of dwelling-houses are seen first when approaching this point.

At Petrie Ledge a bell-buoy is suggested. At South Bar a gas-buoy.

Some Suggestions and Observations Concerning the Gulf and River in General.

It may be further remarked that the want of a proper survey of the Gulf and of proper day-marks on the light-house is very generally expressed, irrespective of any special part of the Gulf or River.

As to the need of a proper survey of the Gulf, see pages 4, 9, 15, 21, 32, 40, 51, 72, 84, 95, 113, 122, 136, 145, 150, 161, 172, 181, 185, 190, 221.

One of the captains (Taylor, at page 113), suggests that the existing charts should take in a zone fifty or sixty miles further north at Belle Isle. Coming in by Belle Isle it sometimes happens that the captains getting a little to the northward, find themselves beyond the zone covered by the charts.

As to day-marks 91, 99, 116, 122, 138, 161, 166, 175, 181, 195, 215, 224. During snow-storms the light-houses are no good as guides in the daytime. Something should be done to make them so. The general suggestion is that there should be some special colored mark placed on the top of a mast. In any case they should not be built so much like ordinary farm houses, and their coloring and size should be carefully considered.

It is important to observe what the captains think of our lights as compared with those of other countries (23, 36, 49, 122, 137, 167, 176, 195).

They have no hesitation in declaring that our lights generally are inferior to those of England, France and the United States, and that the sooner our standard is raised the better.

II. PILOTAGE WATERS FROM FATHER POINT TO MONTREAL.

The fullest and best evidence on this subject is of course that of the pilots. The captains, from Father Point up, intrust the navigation of their ships almost entirely to the pilots, and in consequence their own evidence is comparatively meagre. What suggestions they do make, however, are generally corroborative of the pilots' statements. It will be noticed that, at most places, improvements are asked for by one or two persons only. This is due to the fact that in many cases the captains refrained from offering any suggestions,—they left this to the pilots, who could speak with more authority. So, although most of the desired improvements are the suggestion of only one or two out of a large number of witnesses, yet it must be borne in mind that in most cases the one or two are representative pilots.

(1) Father Point to Quebec.

Beginning at Father Point :—

Bicquette.—A gas-buoy is wanted at the north-west reef (p. 225).

Bic.—Both light and signal need to be improved (p. 220).

Cape Eagle Light.—Should be moved to the next point westwards (221).

Red Island Light-ship.—Should be moved further south, and placed in twenty fathoms (226 and 231).

Green Island.—The gun here is no good. It should be heard at least every five minutes. Best have a siren (156 and 226).

Cape Salmon signal is defective, and the light is not powerful enough (226 and 231).

The Traverse (39, 46, 56, 156, 180, 226, 231 and 238). Evidently improvements are wanted here in the worst way. Nearly all the witnesses speak of this place, and agree in their suggestions. First of all, they want a pier light, with a signal at the lower end, similar to the one recently placed at the upper end. A still stronger wish is expressed for one or more gas-buoys, in addition to the existing one. One witness desires a wider channel at this poi

The Pillars.—A gas-buoy is wanted somewhere on a patch, about south-east of the Pillars. One pilot adds that this should be occulting (227, 232, 238).

Crane Island Channel.—At present this is only four fathoms deep, and ships have to wait on the tide. It should be dredged throughout to a depth of thirty feet, and made a thousand to twelve hundred feet wide. If this were done, the channel would be perfectly safe at any time. The regulations prohibiting schooners from anchoring in this channel should be rigidly enforced (228, 233).

Crane Island light should be seen to. It does not act properly (232). A small pier light should be built on the island where the red can buoy is (238).

St. Thomas Channel should be deepened to thirty feet (227).

Between Crane Island and Bellechasse, there should be a gas-buoy on one of the patches (233).

Bellechasse.—The light here should be changed from a fixed to an occulting one. This change is very strongly urged (227, 239, 215).

St. Laurent.—There is one suggestion here that this light be altered to a flashing one (146).

St. Valier.—A gas-buoy is much wanted at this point to mark the south shore (23, 40, 88).

Point Levis.—Gas-buoy is wanted here in eight fathoms to mark the south shore (24, 228).

Beauport.—A gas-buoy is wanted at the shoal (149).

Quebec Harbor.- Of all the suggested improvements, up the river, the most important seems to be here. All the witnesses speak of this place. What is wanted is a good leading light, for going in and out of the harbor. At present there are two red range lights at the Quebec wharf, but these are strongly condemned by everybody. They are quite insufficient in power, and are not distinguishable, surrounded as they are by numerous electric lights. To remedy this state of affairs, powerful range lights should be placed on the western end of Orleans Island. Of the thirty odd witnesses whose evidence was heard, there were but three who did not want any improvement here. The majority were most emphatic. One or two of them suggested an alternative position for these leading lights, such as some high part of Quebec itself, but they all agreed that no place could be better than the western end of the Isle of Orleans.

Some general observations concerning this part of the river are : sweeping in the springtime would be an advantage (229, 236). The lights from Father Point up are generally good except at Bellechasse (25, 227, 240). The signals are good except the Cape Salmon (240). The charts are good except from Bellechasse to Crane Island (235). Gas-buoys should be oftener charged.

(2) Quebec to Montreal.

Refer to pages 16, 21, 40, 49, 57, 75, 81, 87, 94, 108, 122, 128, 136, 147, 149, 157, 193, 197, 215, 216.

The captains have here and there picked upon places requiring some change. The pilot Auger goes into the subject very thoroughly. His deposition will be summarized, after noting the statements made by the captains, which are, it must be confessed, somewhat conflicting at times.

For the suggestion that more gas-buoys would make night navigation possible, see pages 49, 94, 108, 122, 128, 157, 215. The majority seem to hold that it would not be safe for large vessels to attempt going all the way up in the dark, even if there was a good system of gas-buoys. Grondines is about the limit for large vessels. This does not mean that the majority are opposed to the placing of more lights or buoys, on the contrary, they suggest them at various points to enable ships to anchor a little higher up. Thus the following are suggested. More lights from Quebec to Grondines (136). Gas-buoy at Point aux Trembles en-bas (24). Two gas-buoys around St. Croix and one just before getting to Grondines (157). It certainly seems clear from this that something more is wanted between Quebec and Grondines.

A light between Cap Rouge and Point aux Trembles is wanted (193).

For entering into Montreal harbor after dark, provided a ship has managed to get past the more dangerous parts of the river, the following are suggested. Range lights at Montreal (193). Gas-buoys from Longue Pointe (147). Gas-buoys from Sorel to Montreal (p. 16).

For ships of lighter burden, range lights are suggested at Lake St. Peter and also at Traverse de Nicolet and Champlain to replace the beacons now at the two latter places (216).

Opinion is equally divided as to day-marks (21, 40, 57). Some advocate a system of buoys of different shapes on each side of the channel. The present ones are differently colored on each side of the channel, but the paint soon gets coated over. Others, express themselves satisfied with the present day-marks.

Summary of Pilot Auger's deposition. The light now building at Cap Rouge will be most useful.

Point aux Trembles en bas light is obstructed by trees and should be cleared. The gas-buoys now at this place are very poor and should be improved. They were better up to the spring before last. He would have these buoys with fixed lights. For occulting lights he thinks inconvenient in such very narrow channels where one can only look up from the helm now and again ; it should be possible to see the light at every glance. The gas-buoys should be twenty feet above water.

At St. Croix, when the cut is finished to three hundred feet it will be safe at any time of day or night.

Cape Charles should be widened another hundred feet on the north side on account of the down currents.

The Bar Rodier should be removed for purposes of anchorage.

La Roche channel should be widened 100 to 150 feet. Cape Levrant should be widened on the north side, like Cape Charles, and for the same reason.

At Champlain they should dredge every year as quicksands fill up Pouilliers Grandemont and Charpentier. A good light-house at Champlain would enable this point to be passed at night.

The Lake Channels should be widened another hundred to two hundred feet.

In the Riviere du Loup Traverse past the black and white buoy, the channel is only three hundred feet, and it is most important that it should be dredged out.

Opposite Isle aux Corbeaux, and at Contrecoeur, the channel should be widened to four hundred feet. Above this, up to Port aux Trembles, the whole channel should be widened 100 feet on account of the cross-currents. The lights are satisfactory.

Some gas-buoys leading into Montreal would be valuable. One above Longue Pointe and another between the black and red buoy on the north side.

The cut opposite Longueuil should be six hundred and not three hundred feet.

Two red range lights are wanted in Montreal. These improvements would enable a vessel to come in after dark. The channel should also be dredged from Isle Ronde to the wharf.

The river should be swept every spring.

For large ships coming up from below, navigation after dark is not safe past Grondines. Contrecoeur will never be safe for night navigation, and it would not be advisable to encourage night navigation. Possibly if the channel on the north side were dredged, it would be safe, but this dredging was found very difficult.

Throughout the river, the channel should be twenty-nine feet. As to the day-marks, it does not matter about the shape. Many of the beacons could be improved and made larger.

It would be just as well, too, to place a gas-buoy at Montreal in case the proposed range lights got obstructed in smoke.

END OF SYNOPSIS.

ABRIDGMENT OF THE EVIDENCE TAKEN AT THE ENQUIRY.

(References are to the pages of the volume of evidence printed at length.)

WILLIAM GOLDWORTHY. "Manchester Shipper" of the Manchester Liners (page 1).

The first time through the Straits of Belle Isle for years. Considers fog signals are at too long intervals and that there should be a fog-signal off Fame Point. Considers fog signal at Father Point poor. Prefers explosive rockets to sirens as fog-signals.

JOHN GAMBELL. "Ontarian" Allan Line (page 2).

Sailing to St. Lawrence for fifteen years. Fog-signal necessary at Fame Point and at Matane. There should be fog-signal at Flower Cove, Newfoundland, near the light, to guide ships into the Straits. Sirens, as fog-signals, are better than bombs, as the latter may be mistaken for other noises. Some bombs and some sirens should be used. Light and fog-signal required half way between Heath Point and Point Amour at Little Mecatina or St. Mary's Island. Light and fog-signal required at North-East end of Belle Isle: this is very much wanted. Continuous hydrographic survey of the Gulf and adjoining coasts advisable. There should be fog-signal at Cape Pine where the light now is. Fog-signals should exist wherever there is a light. The light on Fame Point should be replaced by a more distinct light (Quick flashing), and there should be also a fog signal. (Captains Goldworthy, Webb, Carey, Thomas Jones and Richard Griffith agreed that the light at Fame Point was poor and should be replaced by a flashing one.)

WILLIAM WEBB.—"Castalia" Donaldson Line (page 3).

Has been eight years in command. Considers there should be a light on the North East end of Belle Isle and a fog-signal. There should be a fog-signal

wherever there exists a light. Does not believe in fixed lights. There should be a light at St. Mary's Island, and the fog-horn at that point is not loud enough. Against navigation above Quebec by gas buoys.

FRANK CAREY. —"Lake Ontario," Beaver Line (page 4).

In command for twelve years. Has been coming to St. Lawrence for twenty-five years. Light on Belle Isle and fog signal very much wanted. Re survey should be made, as the charts are confusing around Belle Isle. Fog signal required at Flower Ledge. Point Amour whistle is not loud enough and that at Cape Norman is not good. Bombs used are not powerful enough. There should be another light and fog-signal above Heath Point, on South Point, Anticosti. The survey is erroneous at South Point, near Blagetts Bluff, and there should be a buoy outside the shoal at South Point. Fog signals at Father Point are not the best. The bomb at Father Point is no use. Green Island signal is no good, for it is not strong enough. A siren is wanted there. Soundings are not accurate on the Cape Race Route. Matane light, Metis and Cape Magdalen lights should be improved.

THOMAS JONES. —"Cambroman," Dominion Line (page 5).

One year in command. Has been coming to Montreal five and a half years. There should be a fog-signal at Cape Pine, and there should be a fog signal wherever there exists a light. There should be a fog-signal at Fame Point and the light should be a flashing light. There should be a siren at Father Point. The signal at Bird Rocks should be as often as possible.

RICHARD GRIFFITH, Assistant Shore-Captain for the Allan Line (page 5).

Was in command up to 1899. A light and fog signal required at the North East of Belle Isle and fog-signal required on Flower Ledge. A fog-signal is required wherever there exists a light. There should be a light on Fest Cape and a buoy or two to denote the shoal opposite South Point. Fame

Point Light should be removed [illegible] The bombs used are too small. There should be [illegible] shorter intervals between the blasts at Belle Isle [illegible] currents would be useful.

CAPTAIN COLE.—"Degaton," Allan Line, page [illegible]

His first season on the St. Lawrence. [illegible] North East of Belle Isle and a bright [illegible] St. Mary's Island. Heron Point needs a good fog-signal [illegible] signals. Fame Point should have a fog-signal [illegible] not worth anything. Every light-house should [illegible] Captain to pick them up. Interval between fog-signals at Cape Chatte [illegible] twenty minutes, far too long. The [illegible] fired, as they are not heard, and thinks the best fog-signals [illegible] of hydrographic survey. Lights [illegible] revolving or flashing.

CAPTAIN VIPOND.—"Tunisian," Allan Line, page 10.

Fifteen years in command, principally on St. Lawrence. Would be an improvement to have a fog-signal at Cape Pine. Soundings near Belle Isle not reliable. Should be light and gun at North East of Belle Isle. Strong fog-signal needed at Cape Norman. There should be a light-ship off Heart's Point, in twenty fathoms in order to [illegible] point in bad weather and there should be good fog-signals [illegible] Fame Point light should be stronger and there should be [illegible] Lights on the Long Point are very poor and might be improved [illegible] Cape Chatte, Fame Point and Father Point, and signals should be fired every five minutes. Good turning light required [illegible] the Harbour of Quebec. A buoy required off South Point, in view at Bogart's Bank shoal. A fog-signal at Cape Ray is very poor. Should be a light-ship at the East End of Anticosti, on the North East side with a fog-signal on which [illegible] several ships have been lost. Hydrographic survey would be of great advantage. If a few gas-buoys were placed between Sorel and Montreal it would be possible to make Montreal at night. Light on the West End of Orleans Island a first-class thing. Sirens are the best kind of fog-signals.

W. D. JONES. Master, Lake Dominion (Lake Superior) 17

Has been nine years in command. [illegible] Port au Basque [illegible] recommend at Cape Pine [illegible] into the [illegible] Point [illegible] fog signal [illegible] Light at Cape Magdalen, Cape Chat, Mouth River, Mitis and Metis Beach [illegible] Light [illegible] at Father Point [illegible] every five minutes. There should be [illegible] on the North East end of Belle Isle [illegible] required at St. Mary's. A light [illegible] of Hawk Point [illegible] water. Five minutes should be [illegible] every twenty minutes. Hydrographic [illegible] Of opinion that [illegible] would be better than [illegible] Traverse and to mark the [illegible] leading lights to help enter the Harbor of Quebec [illegible] place the black buoy [illegible] wharf on the South side between Quebec and the Island of Orleans. [illegible] on the West end of Orleans Island [illegible] three.

R. O. JONES, "Ottomar," Dominion Line (page 24).

Five years in command. Trading to the St. Lawrence for seventeen years. There should be better gas buoys at Point au Trembles [illegible] The buoys are very poor. There should be another gas buoy at the West End of Orleans Island and a leading light for St. Lawrence Point [illegible] Orleans Islands, and a gas buoy on the South shore. There should be a gas buoy in the Traverse and there should be a light on the Lake Saint Peter North side, as in turning around the light house it is hard to judge the [illegible] night, as you are very apt to give the light house too wide a berth. Fog-signals should be sounded every five minutes and should exist at each light. There should be a fog-signal at Port au Basque. The Signal at Cape Ray is poor. There should be a fog-signal at Cape Pine and a light-ship in twenty fathoms of water off Anticosti. There should be a gas buoy off South Point and a light and fog signal on the North-East of Belle Isle. Considers hydrographic survey of the Gulf advisable. Is of opinion that the minimum of safety as regards

depth of water in channel from Montreal would be at least fourteen or fifteen inches beyond his draught.

J. BRODIE.—"Sarmatian," Allan Line (page 28).

Ten years in command. In St. Lawrence trade off and on for ten years. Suggests light of more penetrating power to replace the present one on Belle Isle, and further light advisable at the North East end of Belle Isle. Suggests fog-signal half-way between Flower Ledge and Cape Norman on the Newfoundland side. Considers lights at Point Amour and Flower Ledge are not penetrating. The only good lights now existing are at St. Pierre and Miquelon (Page 30). Suggests a good survey in the Gulf and that soundings should be taken between Greenley Island and Cape Ray (p. 30). If light is placed on St. Mary's another would be necessary on the Cormorant Rocks. Approves of Light-ship off Heath Point, together with fog-signal. Cape Race should be a light of more penetrating power, as also Cape Pine. The atmosphere is nearly always humid at Cape Pine. Also a fog-signal required at Cape Pine. Light at Bird Rocks very poor. Requires fog-signals wherever lights are, except on the Gaspé Coast, since if they are too close you are apt to mistake one for the other. A powerful light at Fame Point required. Between Fame Point and Father Point all lights should be more powerful, and there should be good fog-signals between those two points. Fog-signals are deficient and are sounded at too long intervals. Leading lights for entering the Harbor of Quebec required at the West end of Orleans Island. If survey of the inside of Gulf were made, equal to that of 1898, it would be a great help to navigation. Canadian lights are inferior to English, French and American lights, and St. Pierre and Miquelon lights are the best on the Canadian Coast. Would like from fifteen to eighteen inches under ship's bottom when navigating.

JAMES DINGLE.—"Assyrian," Leyland Line (page 35).

Fog-signal at Cape Race useless. One would take it for a steamer's whistle. Good fog-signals required at Cape St. Mary, Cape Pine and Cape Ray for the same reason. Bird Rocks should have a revolving light and there should be no fixed lights. Fame Point light and all lights from there to Father Point ought to be improved. There should be a fog-signal wherever there exists a light, especially at Metis, and a larger buoy to indicate the shoal at

Matane. Gas-buoys in Traverse are required. A light on the West end of Orleans Island and a gas-buoy instead of a black-buoy at opposite St. Laurent and more distinctive buoys between Quebec and Montreal are required. Hydrographic survey of Gulf should be continued.

H. W. GOULD.—"Louisburg," Black Diamond Line (page 43).

Sixteen years on St. Lawrence route—between Sydney and Montreal. Should be a fog-signal at Low Point and Cape St. Lawrence and at Cape Pine. The whistle at St. Pauls is not heard to the Westward. There should be a fog-signal at Cape North and the light at Bird Rocks should be flashing (p. 45). There should be no fixed lights. Had there been a fog-signal and a light-house at Byron Island at North Magdalen Island there never would have been an accident there. There should be a fog-signal at Fame Point. Generally speaking, there should be a fog signal wherever there exists a light. Fog-signal, however, are not necessary at Martin River. Matane buoy should be replaced by a gas and bell-buoy. Intervals between fog-signals at present too long—five to seven minutes the greatest interval. Leading lights at Quebec unsatisfactory, there should be something on the West side of Orleans Island. Recommends gas-buoys beween Quebec and Montreal, and considers that twenty gas-buoys judiciously distributed would enable captains to navigate the river at any time. Canadian lights, in his opinion, inferior to English, French and American lights. Fog-signal at Cape St. Francis, Newfoundland, can never be heard to the Westward. There should be another light on Fortune Bay and another light on Belle Isle.

WILLIAM SHOTTON.—"Oceana," Elder-Dempster Line (page 52).

In command three and a half years. Cape Pine should have a fog-signal. Doesn't think much of fog-signals anyway as too long intervals exist between the blasts. Thinks fixed lights dangerous and believes that there should be a fog-signal wherever there exists a light. Should be a leading light to Quebec and a light half way distant on the Island of Orleans. Should be a light ship off Heath Point. If gas-buoys were placed between Montreal and Quebec could navigate at night up to the foot of the current.

WILLIAM STEWART.—"Lake Champlain," Beaver Line (page 58).

In command twenty-nine years, and during entire time to Montreal. Fog-signal and light required at North-East of Belle Isle and light required at Cape Whittle or St. Mary's Island.—The buoy marked on the chart off Heath Point isn't there. Fog-signal needed at Fame Point, and wherever exists a light, there should be a fog-signal.—Cape Pine should have a fog-signal as also Flower Island.—Siren should replace bomb at Father Point and be sounded at very frequent intervals. Present leading lights to Quebec are very poor for outward passage. Light needed on West of Orleans.

W. S. MAIN.—"Numidian," Allan Line (page 69).

In command seventeen years. Trading to Montreal twenty-seven years. Fixed light and siren required at North-East of Belle Isle, and a group and flash light with siren where the present light is. Fog-signal needed on Flower Island. Wherever there exists a light there should be a fog-signal. Should be a light at St. Mary's Island. A light-ship in twenty fathoms off Heath Point. In rounding Heath Point on last voyage saw discoloured water (p. 72). A group flashing light required at Fame Point, and also good fog-signal. Coast from Fame Point to Father Point should be re-surveyed. Cape Pine needs good fog-signal. Lights from Heath Point upwards should be strengthened and the fog-signal required at Father Point. Leading lights to Quebec Harbor should be more powerful and a buoy each side of the channel about opposite Isle Ronde—the channel should be wider.

DAVID MACDONALD.—"Vancouver," Dominion Line (page 76).

Fog-signal required at Cape Pine and Fame Point. Light and fog-signal required at North-East of Belle Isle. Should be fog-signal at St. Marys. Fog-signal should be heard every five minutes (p .79). Light required on West end of Orleans Island.

JOHN FAIRFULL.—"Pomeranian," Allan Line (page 82).

In command ten years. Light and fog-signal required North-East of Belle Isle. Fog-signal required at Flower Island and light at St. Marys. Fixed

light at Heath Point should be changed and a group flashing light of three or four flashes at short intervals should take its place. Fog-signal there not very good, as it explodes only every twenty minutes. Intervals should not be longer than every ten minutes. Of opinion that Gulf should be entirely re-surveyed as soundings made by him did not correspond with those found on the chart. Fog-signal should be placed at Fame Point, and a group there would be more distinguishable. Wherever there is a light there should be a fog-signal. There should be a fog-signal at Cape Pine and the light at Cape Ray should be improved. Flash lights are better than either fixed or revolving lights. Require leading lights to Quebec and light on the West end of Orleans Island and gas-buoy opposite St. John's Point and Island of Orleans.

JOHN G. BAXTER.—"Manchester Commerce," Manchesters Liners (page 89)

In command nine years. Thirteen years in the St. Lawrence trade. Light and siren required at the North-East of Belle Isle. Light required at Cape Whittle. Heath Point light and fog-signal are poor. There should be a light ship anchored off that part of Anticosti and the fog-signal should be at more frequent intervals. There should be a fog-signal at Fame Point. Considers the flash in the present light at Fame Point very poor. Considers there should be a good fog-signal at every light along Gaspe. Light-houses should have more distinguishing day-marks (p. 91). Powerful siren needed at Father Point. Gun on Bird Rocks should be changed to siren and a fog-signal is required at Cape Pine. Believes that lower Gulf ought to be surveyed a little more and fresh charts provided. Finds soundings on charts different altogether from what he got himself on the Southern route (p. 95).

ALEXANDER FERRIS.—"Larne," Lord Line (page 96).

In command twenty-eight years. Second year on St. Lawrence on steamer, though he came here a number of years ago on a sailing ship. Considers lights between Fame Point and Father Point very poor and that they should be stronger. Wherever there is a light there should be a fog-signal, the fog-signals being different, the one from the other. Light-houses should have better day-marks and there should be a light on St. Mary's Island and a

light ship off Heath Point. Considers hydrographic survey of Gulf advisable. Lights on the St. Lawrence very poor in comparison with American lights and lights on the British coast. Powerful light is required at Cape Pine. Intervals between fog-signals should be from ten to five minutes. Finds soundings on charts inside Gulf not always as found in actual work on ship nor has he found the currents setting, as a rule, as shown on the charts.

WILLIAM H. TAYLOR.—"Lake Megantic," Beaver Line (page 103).

Nine years in command and eighteen years on the St. Lawrence route. There should be a light and fog-signal on Cape Pine, the light being an occulting light of three or four flashes every minute. Considers that sirens are better than guns as you can't trust the latter. Light on Port Basque very bad. Fame Point should have a fog signal and either a siren or a whistle and there should be a different buoy off Matane, and a siren and gun at Father Point (p. 107). Should be a light ship off Fox Bay, Anticosti. Fog-signal at Heath Point should be a siren instead of a gun and there should be a light at St. Mary's and a light on the North-East of Belle Isle (p. 111). Considers that chart should be extended fifty or sixty miles further North to provide for cases where a vessel coming from the North strikes North of Belle Isle in which case the Master is off the chart (pp. 112 and 113). Recommends occulting lights but not lights that are two minute lights. If interval were two or three seconds or something like that one is sure to see the light (p. 116). Light-houses should have more distinguishing day-marks (p. 116).

V. LANDER.—"Yola," Elder-Dempster Line (page 117).

Three years in command. Ten years on the St. Lawrence route. Light and good fog-whistle required North-East of Belle Isle (p. 119). Fog-whistle required at Flower Island. Fog-whistle or light at Cape Whittle or St. Mary's but would like these at both places. Light-ship should be placed near Fox Bay, Anticosti. Fame Point needs a whistle. Suggests alteration of light at Cape Magdalen to a quick flashing light (p. 120). A gas-buoy required at Matane better than the one there at present, and a buoy at Cock Point would be useful for picking up pilots at Father Point. There should be a fog-signal wherever there exists a light. Cape Pine should have a flashing light.. Red

light at Port au Basque absolutely useless. Good light needed on the Island of Orleans for ships going East. Recommends a new hydrographic survey. American, English and French lights are better than Canadian lights. Day-marks should be improved. Fog whistles should be sounded with intervals not longer than a minute in a fog.

GEORGE BUCKINGHAM.—"Rapidan," Furness Line (page 124).

Only three voyages to the St. Lawrence. Cape Pine should be a flashing light. Of opinion that there should not be a fixed light on the coast (p.125). There should be a good fog-signal, namely a siren or whistle wherever there exists a light. There should be a light between Point Neuf and Point des Monts. Fyles statement (p. 127). Day-marks should be more distinctive and fog signals should be sounded at least every five minutes. If gas-buoys substituted for present ones and white lights on port side and red lights on starboard side, sees no reason why ships can't come to Montreal at night.

JAMES DORWOOD.—"Hurona," Thomson Line (page 130).

In command four years. Running to St. Lawrence for ten years. Light and fog-signal required North-East of Belle Isle. Light should exist off St. Mary's Island. Heath Point light might be improved by a stronger light. Favors light-ship towards East Cape, Anticosti. There should be a fog-signal at Fame Point, and wherever there exists a light. Considers Fame Point light poor as also that of Cape Magdalen (p. 133). Lights in lower St. Lawrence should be very powerful. Of opinion that Cape Pine should have a fog-signal and that the light on Cape Ray should be more powerful. Light on Bird Rocks very bad (p. 135). There should exist a light in the middle, half way distant, on the Island of Orleans. Prefers flashing lights (p. 136), with five seconds between the flashes and sirens for fog-signals. Considers that Canadian lights are not as good as those on the British Channel. Light-houses used as day-marks should be much bigger and better be colored black than white as they are at present.

WILLIAM DUNLOP.—"Corinthian," Allan Line (page 139).

In command fourteen years. Eighteen years on the St. Lawrence. Asks to have soundings revised on the first bank approaching Belle Isle (pp. 140, 150 and 151). Light and fog-signal at North-East of Belle Isle would be an advantage as also a fog-signal on Flower Island. A fog-signal on Greenley Island and Point Amour should be more distinct and characteristic, so as to be more easily distinguished the one from the other. Doubts whether a light ship would remain anchored off Anticosti in twenty fathoms and suggests an automatic buoy to replace the buoy that was there and was taken away. Considers there should be fog-signal at Heath Point instead of gun and that where ever there is a light there should be a fog-signal. Is of opinion that red flash should be omitted from Fame Point light and that a fog-signal should be added, namely a horn with two blasts (p. 144). Fog-signal at Cape Chatte should be improved and is of opinion that Father Point should have a fog-horn instead of a gun (p. 144). Fog-signal at Cape Race should be improved, as also the light as it does not penetrate. Proper hydrographic survey is imperatively necessary. Considers Cape Ray fog-signal very poor. Fixed light at St. Lawrence Point on Orleans Island should be changed to a flash light and gas-buoy should be placed at the point off Beauport. Considers that gas-buoys between Quebec and Montreal should be such as used in England or such as are in the lower St. Lawrence, if they were as good as the latter they would be sufficient, and with more of them, and with a couple of range lights navigation would be aided (p. 147). Of opinion that the day-marks should be distinguishable. Prefers fog-horns as fog-signals wherever they can be made distinctive enough (p. 148).

WILLIAM ROLLO.—"Tritonia," Donaldson Line (page 151).

Twenty-five years on St. Lawrence. Light and fog-signal required North-East of Belle Isle. Fog-signal and powerful light required at Cape Whittle. Considers that fog-signals should exist wherever there is a light. Of opinion that Heath Point should have a flashing light and that the gun should be changed to a fog-horn and a light-ship should be placed ten miles off Heath Point together with a fog-horn. Fame Point light needs to be improved in the worst way and should have a flashing light. Considers flash in the Magdalen light far too long (p. 151). Martin River should have a powerful fog-horn. Is of opinion that fixed lights should be changed to revolving or flashing

lights. Considers that fog-signal at Cape Chatte is fired at too long intervals, and considers that a fog-horn should be kept going constantly and that variations should exist in the blasts, that is, one would be for thirty seconds and another forty and another fifty seconds, and by counting the number of seconds in the blasts one could distinguish them. Cape Chatte bomb should be exploded every five minutes. Considers best fog-signal a siren or fog-horn. Suggests another fog-signal at Father Point, and that Green Island bomb should be fired every five minutes. Advises that there should be some gas-buoys in narrow parts of the traverse and all along Green Island and that there should be a leading light to Quebec which could also be used when leaving Quebec. A few more gas-buoys between Grondines and Quebec would be of service. Advises that Cape Pine light should be changed to flashing light and that there should be a fog-signal. Flint Island light he considers most miserable, and thinks that Low Point light should be changed to flashing light and the light at Cape North wants improving. Is of opinion that Cape Ray light should be changed to Port au Basque and if this change is not made the light should be stronger. Bird Rock's light, now a fixed one, should be changed to a revolving light and there should be added a powerful horn. Considers hydrographic survey of Gulf advisable and that day-marks should be more distinctive.

WILLIAM STITT.—"Alcides," Donaldson Line (page 162).

Two years in command in St. Lawrence. Considers light and fog-signal at North-East of Belle Isle advisable and that fog-signal should be either a siren or a good whistle. Fog-signal should be placed on Flower Island. Wherever there is a light there should be a fog-signal. That there should be placed a light and fog-signal at Cape Whittle and a light at East Cape, and that fixed light at Heath Point should be changed to a flashing light. Considers that light at Fame Point is no good good (p. 164), and that there should be a siren at that point. Light at Cape Magdalen is not powerful enough. Advises large can-buoy being placed at Matane, and fixed light at Martin River should be altered. Is of opinion that fog-signal at Cape Chatte should be changed to a whistle or siren and that there should be a whistle or siren at Father Point. Is of opinion that Cape Race light should be further West and more powerful, and that Cape Pine should have fog-signal and a more powerful light. Considers that Cape Ray light is too far West and should be moved further East to Duck Island. Is of opinion that a fog signal would be better than a gun at Bird

Rocks. Considers Flint Island light very bad and fog-signal at Cranberry Head would be better alongside the light at Low Point. There should be a leading light at Western end of Orleans Island. American lights better than ours. Light-ship off East Cape of Anticosti with good fog-signal would be a good thing. For ships approaching the Bay of Funday a light-ship in twenty or twenty-five fathoms with a proper fog-signal would be a good thing. There should be a light-ship with a good fog-signal at Larcher Shoals. Is of opinion that there should be a light-ship off Brier Island.

G. C. EVANS.—"Lake Superior," Beaver Line (page 169).

In command three years—sixteen years on St. Lawrence route. Light-ship and fog-signal are required at North-East of Belle Isle. Light required at St. Mary's, and fog-signal at Flower Island. There should be a fog-signal wherever there is a light if you can make them distinctive. The light at Heath Point should be flashing and there should be another light at East Cape. Then it would be well to have a fog-signal on one of the islands off the Bay of St. Johns, and also a light. Believes that the whole Gulf should be re-surveyed. Considers that Fame Point should have a powerful flashing light and fog-signal. Matane light wants improving and the Matane buoy should be changed to a large can whistling buoy. Advises a fog-signal at Father Point besides the present gun, and that a light should be placed on the West end of Orleans Island. Light at Cape Race should be made more powerful. Cape Pine should have fog-signal. Advises flashing instead of revolving light at Cape Ray. Considers that Gull Island should have twenty mile light, and Cape Negro Light wants improving, as also Baccaro Light. Is of opinion that day-marks should be more distinctive. Considers English and American lights better than Canadian.

WALTER CHAPMAN.—"Monteagle," Elder Dempster Line (page 177).

Two years in command—one season on St. Lawrence. Fog signal required at Cape Pine. Wherever there exists a light there should be a powerful signal. Bird Rocks gun should be changed to siren. Fame Point and Cape Magdalen lights should be changed to powerful occulting lights. Martin River lights and the lights above there along the coast are not good and fog-signal should be

better. Cape Chatte fog-signal requires altering and buoy at Matane should be changed to a bigger automatic can-buoy. Lights at Matane and Little Metis should be more powerful and fog-signals should be placed in both places. The light at Father Point is good but should be higher and fog-signals should be changed. Should be light and fog-signal at North-East of Belle Isle. Fog-signal at Cape Norman and Cape Bald can be mistaken one for the other and should be changed (p. 180). Fog-signal required at Flower Island. Light and fog-signal should be placed at St. Mary's or Cape Whittle. Fog-signals on coast not powerful enough and not as powerful as American or British. Should be a light-ship off Heath Point. Considers that Traverse should have bigger buoys and should be widened a little and that there should be a leading light on the West end of Orleans, and that land-marks should be more distinctive (p. 181). Considers survey should be made of entire Gulf.

EDWARD MINISTER.—"Lord Iveigh," Lord Line (page 182).

Master four years. In St. Lawrence last season and this. Fog-whistles should be strengthened to improve navigation up Straits of Belle Isle. Should always have fog-signal wherever there exists a light. Considers there should be a light-ship off Heath Point. Is of opinion that Cape Race light should be further South (p. 184). Should be a fog-signal at Cape Pine. Considers that Cape Ray light ought to be on Duck Island. Fame Point light he thinks poor. It requires a flash or something one can see and there should be a strong fog-signal, namely, a siren with a low and high sound. Considers that between Cape Magdalen and Father Point the lights are poor and should be stronger. There should be a leading light or two on Western Point of Orleans Island. Soundings on Banks of Newfoundland very indifferent and at other points not good (p. 185). Favors hydrographic survey. A flashing-light is required at St. Mary's Island. Prefers flashing lights to fixed lights and sirens to guns. Blasts in intervals of from two to four minutes.

JOHN WALLACE.—"Parisian," Allan Line (page 188).

Twelve to thirteen years in command. Twenty five years on St. Lawrence route. Flashing light with horn or siren needed at North East of Belle Isle.

Does not approve of guns at all. Favors new survey. Should be fog-signal at Flower Island. Wherever there is a light there should be a fog-signal. Suggests light and fog-signal on high place between Heath Point and Les Bras (pp. 190 and 191). Should be fog-signal at Fame Point, and fog-signal at Father Point should be either a horn or a siren. Should be a fog-signal at Cape Pine, and the one at Bird Rocks should be changed. Considers there should be a light between Cape Rouge and Point au Trembles, and for a certain part of the River between Quebec and Montreal prefers leading lights to gas-buoys. Considers Canadian lights not so good as British or American. Blasts of fog-signals should be every half-minute when the fog is on.

CLEOPHAS AUGER : President of the Corporation of Quebec Pilots (above Quebec), (page 197).

President for the last five or six years—for two or three years in all, and on the Committee of Quebec Pilots for all the time he has acted as pilot, excepting two years. Pilot for twenty-six years. There should be a better light at St. Antoine. Gas-buoys in the river should be fixed lights and not revolving or flashing lights (above Quebec). States that the gas-buoys which are used to enable one to pass Point au Tremble have been changed, and are now inferior to what they were before, the trouble with the present gas-buoys being that they are too low in the water. The dredging at St. Croix apparently has not been continued during the last summer. The channel at Cape Charles and Cape La Roche should be widened to the extent of a further one hundred feet on the North side of Cape Charles. Is of opinion that Barre Rodier should be taken away altogether (p. 199). Cape La Roche channel should be widened the same as Cape Charles by another 100 or 150 feet. The channel at Cape Levrant should be widened on the North side the same as Cape Charles channel and for the same reason. At Champlain the parties responsible should be careful to dredge every year or every two years because the channel fills up at Poullier Grandmont and at Poullier Carpentier owing to the quicksand formation which fills up every year. If there existed light-houses at Champlain they could pass at night.

As to Lake St. Peter, his opinion is the Lakes should be widened at least to the extent of 100 or 200 feet. At present it is dangerous especially in the Rivière du Loup traverse especially from Light ship No. 2 to the black and white buoy (p. 201), and this suggestion of widening the channel applies all

along right through the lakes. At Ile au Corbeau the authorities are at present dredging but the channel should be 400 feet wide at that place. Contrecœur channel should be widened to 400 feet. Point au Trembles channel should be widened another 100 feet (p. 202). Above Point aux Trembles it would be very satisfactory to have more buoys if bad weather. After one passes the red buoy at Long Point there should be one about half way between the black buoy and the red buoy on the North side, and he recommends that the cut opposite Longueuil church be widened to at least 600 feet instead of 300 feet as at present.

For entering Montreal recommends big beacons or light-houses with red lights, so that pilots can bring their ships into Montreal at night. And two range lights in Montreal which should be placed just where the steeple and house that they keep in line now are situated. These lights would enable pilots to bring ships into Montreal at night, provided the widening of the channel opposite Longueuil is carried out. The channel from Isle Ronde to the wharf should be dredged from one side to the other as it is dangerous at present. The channel should be swept every year especially in the narrow and shallow places.

Would like to have the channel widened from Quebec to Montreal to 500 feet except in the special cases where he has asked for 600 feet or over. A width of 600 feet would be better than 500, and there should be a depth of twenty-nine feet throughout at low water. On Lake St. Peter light-ships should be replaced by piers with light houses. At the lower end of the lake he maintains there is a light-ship coming in line with a light on shore, and instead of this he maintains there should be a pier with a light on top. And below the traverse a black and white buoy which exists should be replaced by a gas-buoy. The buoys between Quebec and Montreal should be as big as possible. The beacons generally on the route between Quebec and Montreal could, for the greater part, be improved. Depth of water to have beneath the keel of a loaded boat as she lies at the wharf, depends on the shape of the boat—if she happens to be a flat-bottomed boat and a big ship a foot and a-half is the minimum.

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L. R. DEMERS.—"Campana," Quebec Steamship Co. (page 210).

Sixteen years' experience in Gulf. Usual voyage Montreal to Pictou. Lights on Prince Edward are fixed and red lights. Is completely adverse to red lights for long range lights. These lights should be made distinguishable,

and he would prefer flashing to fixed lights. There are no fog-signals in Prince Edward Island and there should be one at the West point on Prince Edwards Island. Complains of automatic buoy marking the reef outside of West Point. There should be a flash light at Cape Egmont and at Grand River. Guns should be fired every five minutes and not every twenty minutes (p. 212). Fog signal at Cape Rosier cannot be heard (p. 212). Fame Point light should be more powerful, without the red flash, and there should be a powerful fog siren there. Cape Magdalen light should have the red flash omitted from it. There should be a powerful siren at every light and the sirens should be distinguishable the one from the other. The light-house at Cape Chatte should be moved to the reef where a siren should also be placed (p. 214). Matane should have fog-signal and light-ship with fog-horn to mark shoals. Father Point should have fog-horn. The day marks should be more distinguishable. Bellechasse light should be occulting and distinguishable from ship's anchor lights. There should be a good light-house on the West end of Orleans Island. Thinks river navigable at night for ships coming up light, if sufficient range lights on Lake St. Peter, (p. 216).

D. C. FRASER.—"Bonavista," Black Diamond Line (page 218).

Twenty-five years on the St. Lawrence. Principal voyages Montreal, calling at Charlottetown, Sydney and St. John, Newfoundland. Good whistle required at Cape Pine at Western Cape, and good light at Bird Rocks wanted. Fog-whistles at present inferior and should be first class on points such as Cape Race, Cape Ray and Cape Pine. Group flashing light needed at Low Point, and steam whistle. There should be a revolving light at Flint Island with more power. There should be a bell-buoy on Petree Ledge and a gas-buoy at South Bar. A good whistle is required at Cape North, Cape Breton, if it can be made distinct enough from the one at St. Paul. Is of opinion that wherever there is a leading light there should be a fog signal. Fame Point light is in his opinion a third class, and it should be of the first class. Fog-signal at Cape Rosier is poor. Is of opinion that Father Point and Bic should have stronger lights and considers that hydrographic survey should be continued. Light-house at Cape Eagle (near Murray Bay) would be better if placed at the next point to the Westward. Turning lights for entering the Harbor of Quebec, should be placed on the lower end of the breakwater, with sectors (p. 221), and range lights on Orleans Island should be placed to guide ship outward bound. Does not see why an ordinary ship (not a warehouse, as is running now), with proper range lights could not come up Cape La Roche Channel by night as well as by day,

and past Champlain with proper range lights and sectors on the sides of the range lights to mark the sides of the channel out of the channel in passing another ship. As to the Lake he doesn't know as there are corners there, but from the lake up with proper gas buoys and leading lights he doesn't think there would be any trouble (p. 222). Is of opinion that [illegible] should be made more distinguishable to serve as day-marks.

LOUIS E. MORIN, President of the Corporation of Quebec Pilots (below Quebec), (page 224).

Pilot for thirty-nine years. Would suggest a gas buoy on the North-West Reef at Bicquet. States that they now want (principally the Quebec pilots) to remove the Red Island light-ship. At Father Point, Quebec Pilots want a whistle or gas buoy outside to guide a ship coming in. [illegible] siren at Father Point. At Green Island recommends a siren with class every minute or two minutes. Considers that Cape Salmon fog-signal is defective. At the Traverse the Quebec Pilots want another pier where the black buoy is at Point St. Roch and there should be a light on it. Though he admits there is a fog-signal on the light-ship, he declares it would be a good thing to have one on the pier, since when ships get to the point they are getting into the narrows and want everything to help them. He considers that a gas buoy is wanted and states that the Quebec Pilots want a gas buoy abreast of the new pier that is in position now, which can be described as being at the West end of the middle ground in the Traverse. They want another gas buoy between the pillars and the Channel Patch on the South side. They require in addition that Crane Island channel be straightened and made at least five fathoms deep instead of the present depth of only four fathoms (p. 227). The width of this channel should be from 1000 to 1200 feet to allow ships to meet. States that St. Thomas channel should be deepened to thirty feet and that Bellechasse light should be changed from a fixed one to an occulting or revolving or flashing light. A gas-buoy required at Beaumont Shoal abreast of Point St. Lawrence. Light required on West end of Orleans Island to help ships coming out of the harbor at Quebec. Until this is done they require a gas-buoy at Point Levis in about eight fathoms of water. Considers that all the lights between Father Point and Quebec are good except Bellechasse light, which should be changed to revolving flashing or occulting light. Is of opinion that all schooners and small vessels should be forbidden to anchor in the little

channel at Crane Island. Channel should be swept. Is of opinion that government officials could act more promptly when repairs or any arrangements in the River are reported.

ALFRED LAROCHELLE : Pilot for thirty years on Lower St. Lawrence. (page 230).

Should be whistle at Father Point. Red Island light-ship should be shifted into twenty or twenty-five fathoms of water to Southward. Cape Salmon light should be stronger for it should be a twenty mile light instead of a twelve mile light as it is now. Fog-signal there no good (p. 231). Lower traverse light-ship should be replaced by permanent pier—there is a middle bank there and there should be a gas-buoy (p. 231). Should be a gas-buoy somewhere to the South of the Pillars. In little channel at Crane Island at the upper end there is only a depth of 24 feet and this should be dredged to 30 feet, but it would be better to dredge the entire channel to thirty feet (p. 232). Channel should be widened to 800 or 1000 feet. The occulting light at Crane Island doesn't work well. Crane Island should have an addition in the shape of a red light (p. 232). By-law not allowing schooners to anchor in Crane Island Channel should be enforced (p. 233). A gas-buoy is needed between Bellechasse and Crane Island, and a gas-buoy should be placed at Beauport instead of a black buoy. Recommends a good range light at South end of Orleans Island which would serve in going into Quebec and out of Quebec. Advises gas-buoy off Point Levis in conjunction with range lights. Cable lights (presumably at Quebec) might be green instead of red. All lights from Quebec to Father Point should be made stronger, except the one in the Traverse and the Red Island light, and the Pillars. Is against any fixed lights. To Eastward of Cape Dog would advise lights and fog-signals. Satisfied with charts excepting between Bellechasse and Crane Island. Marks between these places not satisfactory. Would recommend buoys, beacons, spar-buoys, and day-marks between Bellechasse and Crane Island. Considers that the explanatory notes on the charts are not sufficient. Channel should be swept every year. Thinks search should be made for the place at which the Sarmatian and Etolia touched. If complaints are made about buoys or lights they are not attended to with sufficient promptness.

JOHN BERNIER, Pilot on the Lower St. Lawrence between Quebec and Father Point for nineteen years (page 237).

Another pier should be placed in the traverse to replace the light-ship. should be good occulting gas-buoy on the patch South East of Pillars and with some dredging in Crane Island Channel. Channel should be dredged to thirty feet in depth and to 1000 or 1200 feet in breadth. There should be a small pier built on Crane Island where the red can-buoy is, and there should be a light on it for the night time and for early in the Spring and late in the season. The channel should be dredged above Crane Island abreast of Margaret Island, where there are shoals right in the middle of the channel—should be dredged to a depth of thirty feet. Bellechasse light should be occulting instead of fixed. There should be a range light on the South-West end of Orleans Island and a gas-buoy at Point Levis, and also a gas-buoy at the entrance of the traverse for steamers outward bound. Is of opinion that Cape Salmon fog-signal is not satisfactory, and that government does not keep pilots fully posted. Considers the channel between Crane Island and the traverse should be swept every year. Believes that to help ships to Quebec, gas-buoys should be placed at Point Levis in five fathoms of water and a range light should be placed on the West end of Orleans Island to help ships going out of Quebec.

END OF ABRIDGEMENT.